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HBO Therapy

Hyperbaric oxygen (HBO) therapy is a conservative therapy that involves inhaling up to 100% oxygen at a pressure greater than one atmosphere in a pressurized chamber design for such purpose. Most typical indications for hyperbaric oxygen therapy involve the use of hyperbaric pressures above two atmospheres. Such pressures are needed to manage conditions such as carbon monoxide poisoning and improve wound healing. HBO therapy for children is safe, even at pressures above two atmospheres. Some surgical conditions where concomitant HBO therapy in children has shown favorable results include crush injury, traumatic ischemia, electrical injuries, compartment syndrome, clostridial myonecrosis, necrotizing fasciitis, chemotherapy-induced neutropenia fasciitis, compromised skin graft, ischemic flaps, and refractory osteomyelitis. In order to see the favorable effects of HBO therapy, it is better to start the treatment within the first 24-48 hours following injury. An increased oxygen concentration during HBO therapy promoted spontaneous wound healing. The needs of the pediatric patient, especially the critically ill, require specific skills and equipment inside the hyperbaric chamber. Close collaboration between the pediatrician and the hyperbaric medicine physician is essential to ensure adequate care for infants and children.

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Anterior Mediastinal Mass

The differential diagnosis of an anterior mediastinal mass in a child includes in order of increased frequency a lymphoma, teratoma, thymoma or suprasternal goiter. Histopathologic analysis of an anterior mediastinal mass of unknown origin is essential

for treatment decision. An anterior mediastinal mass can risk airway compromised. General anesthesia should be avoided in children with tracheal cross sectional area or peak expiratory flow rate less than 50% of predicted for age and sex, or severe narrowing and occlusion of a main stem bronchi. Diagnosis can be established in most patients by open biopsy or image-guided core needle biopsy under local anesthesia. Other cases might need aspiration of pleural effusion or bone marrow biopsy for diagnosis. Children that present with symptoms of dyspnea at rest, orthopnea, respiratory distress, or stridor are at risk of respiratory collapse. In severe cases when symptoms of respiratory collapse are present and the diagnosis cannot be obtained, a short course of steroid therapy can reduce the size of the mass and improve the child clinically. The Chamberlain procedure provides excellent access to the antero-superior mediastinum for biopsy of obscure mediastinal mass lesions in childhood with a low rate of complications. Should general anesthesia be needed, spontaneous ventilation is preferred.

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Cleft Lift Procedure

Sacroccygeal pilonidal sinus disease is a chronic disorder that recurs even after adequate surgical procedures. Recurrence and chronicity are attributed to the depth of the gluteal cleft, moist bacteria-laden conditions within the airless cleft, incomplete excision of the diseased tissue, midline suture line, and closure tension. For the past years the cleft lift procedure has been applied to this disorder as a means of reducing recurrence. This technique involves excision of the chronic disease with a parasagittal elliptical resection and primary closure of the defect with a lateral-based flap, resulting in a tension-free closure that flattens the natal cleft and shifts the healing point laterally off of the midline. The flap technique aims at removing all the inflamed deep tissues, and the creation of a thick fat flap that reduces the depth of the airless cleft while decreasing the recurrence rate significantly. The cleft lift procedure does not involve wide excision of the deep inflamed tissue. The cleft lift procedure is a superior treatment method of pilonidal disease in adolescents, resulting in improved wound healing and lower likelihood of recurrent disease. Shaving, pulling hairs from the pores, and careful cleaning may be enough for earliest disease. The mystery of unhealed pilonidal disease is solved by understanding that the shape of the cleft and the conditions generated within that cleft inhibit epidermal closure and are the reason for

the failure to heal.

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